

I. AMENDMENTS TO THE CLAIMS:

Kindly amend claims 1 and 5-7 as follows.

The following Listing of Claims replaces all prior listings, or versions, of claims in the above-captioned application.

Listing of Claims:

1. (Currently Amended) A gas supply facility for a chamber, wherein the gas supply facility comprises:
 - (a) a chamber exhausted by a vacuum pump;
 - (b) a first pressure type flow controller controlling a small flow ~~rate~~quantity corresponding to 10% of a maximum flow rate of the gas supply facility to the chamber;
 - (b) a second pressure type flow controller controlling a large flow ~~rate~~quantity corresponding to 90% of the maximum flow rate of the gas supply facility to the chamber, wherein the second pressure type flow controller is connected in parallel with the first pressure type flow controller;
 - (c) a third controller operably connected to control operation of the first pressure type flow controller and the second pressure type flow controller; wherein the first pressure type flow controller and the second pressure type flow controller each comprises
 - i. an orifice;
 - ii. a pressure detector provided on an upstream side of the orifice;
 - iii. a control valve provided on an upstream side of the pressure detector; and
 - iv. a computation control part that computes gas flow rate Q_c of gas passing through the orifice using pressure P_1 detected by the pressure detector and

using formula $Q_c = KP_1$, where K is constant, so that a difference Q_y with a set flow rate Q_s is outputted as a driving signal to the control valve so that a ratio P_1/P_2 of pressure P_1 on the upstream side of the orifice and pressure P_2 on the downstream side of the orifice is maintained at approximately two or more, wherein accurate flow control over a wide flow rate range is achieved because the first pressure type flow controller controls the small flow ~~rate~~quantity gas flow rate range up to 10% of the maximum flow rate supplied to the chamber, while the second pressure type flow controller controls the large flow ~~rate~~quantity gas flow rate range of about 10-100% of the maximum flow rate supplied to the chamber; and

wherein the third controller comprises

i. an input setting part that sets the maximum flow rate of gas supplied to the chamber; and

ii. a signal conversion part;

wherein the first pressure type flow controller is initially operated to control small flow ~~rate~~quantity and when flow rate reaches 10% of the maximum flow rate the second pressure type flow controller is switched into operation, wherein first control signals for both the first pressure type flow controller and the second pressure type flow controller are provided by ~~the~~a signal conversion part thereby enabling accurate flow rate control over a wide flow rate range by remitting first control signals from the signal conversion part to the first pressure type flow controller and the second pressure type flow controller.

Claims 2 to 4 have been cancelled.

5. (Currently Amended) A gas supply facility as claimed in Claim 1, further comprising:

(e) a rising rate setting mechanism operably connected to remit second control signals to the first pressure type flow controller and the second pressure type flow controller so as to control a large flow range, and said second pressure type flow controller controlling the large flow ~~rate~~quantity supplies the set flow rate of gas after a specified lapse of time following remittance of the second control signals.

6. (Currently Amended) A method for internal pressure control of a chamber, the method comprising the steps of:

(a) continuously operating a vacuum pump to decompress, through an exhaust line equipped with a conductance valve, a chamber supplied with a gas from a gas supply facility equipped with a first pressure type flow controller controlling a small flow ~~rate~~quantity corresponding to 10% of a maximum flow rate of the gas supply facility to the chamber and a second pressure type flow controller controlling a large flow ~~rate~~quantity corresponding to 90% of the maximum flow rate of the gas supply facility to the chamber, wherein the second pressure type flow controller is connected in parallel with the first pressure type flow controller, wherein the first pressure type flow controller is initially operated to control small flow rate and when flow rate reaches 10% of the maximum flow rate the second pressure type flow controller is switched into operation, and the first pressure type flow controller and the second pressure type flow controller each comprises

- i. an orifice;
- ii. a pressure detector provided on an upstream side of the orifice;

iii. a control valve provided on an upstream side of the pressure detector; and

iv. a computation control part that computes a first gas flow rate Q_c of gas passing through the orifice using pressure P_1 detected by the pressure detector and using formula $Q_c = KP_1$, where K is constant, so that a difference Q_y with a set flow rate Q_s is outputted as a driving signal to the control valve so that a ratio P_1/P_2 of pressure P_1 on the upstream side of the orifice and pressure P_2 on the downstream side of the orifice is maintained at approximately two or more;

(b) determining a relationship between a gas supply flow rate and an internal pressure of the chamber at both a maximum degree and a minimum degree of opening of the conductance valve, respectively, to ascertain a first control range for the gas supply flow rate supplied to the chamber and a second control range of internal pressure of the chamber; and

(c) regulating the first gas flow rate, while supplying gas from the gas supply facility, so that the first gas flow rate reaches the gas supply flow rate corresponding to a desired set internal pressure of the chamber that is determined from the relationship between the gas supply flow rate and the internal pressure of the chamber in order to maintain the chamber at the desired set pressure.

7. (Currently Amended) A method for internal pressure control of a chamber as claimed in Claim 6, the method further comprising the steps of:

(d) supplying the chamber connected to both the gas supply facility and an exhaust system comprising the exhaust line having the conductance ~~valve~~valve; and

(e) maintaining the internal pressure of the chamber at the set pressure by regulating both opening of the conductance valve of the exhaust system and the supply flow rate of the gas supply facility.

8. (Cancelled)